

## Section 4 Scope and Role of Operable Unit

The Silver Bow Creek/Butte Area Site is one of four Superfund Sites in the Clark Fork Basin. The four sites are:

- Anaconda Smelter Site
- Milltown Reservoir/Clark Fork River Site
- Montana Pole and Treating Plant Site
- Silver Bow Creek/Butte Area Site

Together with the Anaconda Smelter and Milltown Reservoir/Clark Fork River sites, the Silver Bow Creek/Butte Area Site is included in what is referred to as the Clark Fork Basin Superfund Sites (Figure 4-1). These sites were listed on the NPL to address the release or threat of release of contaminants related to the mining and ore-processing facilities in Butte and Anaconda and other mining related facilities in and along Silver Bow Creek and the upper Clark Fork River.

The Butte Priority Soils OU addressed by this ROD is one of many OUs in the Silver Bow Creek/Butte Area Site. This OU focuses on historic mining areas within the urban areas of Butte and Walkerville, as well as surface water and alluvial groundwater in the Silver Bow Creek floodplain through Butte, and is described more thoroughly in Part 2, Section 1.

The four Superfund sites in the Clark Fork Basin extend from the headwaters of Silver Bow Creek north of Butte to the Milltown Dam on the Clark Fork River near Missoula. Although the sites are interrelated, cleanup schedules and time frames are based on site-specific and OU-specific risk conditions. In some instances, these OUs are physically commingled. For example, the BMFOU addresses the bedrock groundwater system under a portion of the BPSOU. The West Side Soils OU includes other metals-impacted areas within the Silver Bow Creek/Butte Area Site not addressed under the BPSOU, the BMFOU, or the Active Mining OU. In addition, the Montana Pole and Treating Plant NPL Site is located entirely within the BPSOU boundary. There is some overlap, including the mobilization and transport of COCs to and from adjacent areas, among these sites. Generally, however, these sites are studied and remediated separately and distinctly.

The Montana Pole and Treating Plant Site is an organic waste site not related to mine wastes. It is a smaller, 40-acre state-lead site located entirely within the Butte Priority Soils OU. This former wood treating facility, located along the south side of Silver Bow Creek opposite of Lower Area One, is contaminated with pentachlorophenol and other organic compounds used as wood preservatives. A multiple-phase cleanup started in 1996 with final completion expected before 2010. DEQ will continue to

operate a Montana Pole water treatment plant and in-situ treatment facilities for decades at this site.

***Silver Bow Creek/Butte Area NPL Site***

The Silver Bow Creek/Butte Area NPL Site is divided into two portions for administrative purposes - the Butte portion and the original portion. The Butte Priority Soils OU (as described extensively in this ROD) is one of four remedial OUs within Butte portion (Figure 4-1). The other three OUs in the Butte portion include:

***Butte Mine Flooding OU.*** This area consists of flooding of the Berkeley Pit and hydraulically connected underground mine workings and associated bedrock and alluvial aquifers in response to the cessation of dewatering practices. It also addresses the bedrock groundwater system under a large portion of the Butte Priority Soils OU.

EPA completed a ROD for this OU in 1994. A state-of-the-art treatment plant was recently completed to treat inflow from the active mine area. This treated water is currently being used by the active mining operations. Berkeley Pit water will be treated at this treatment plant when rising water levels in the Berkeley Pit reach the determined critical water level. Treated water will be discharged to Silver Bow Creek or reused within the active mine.

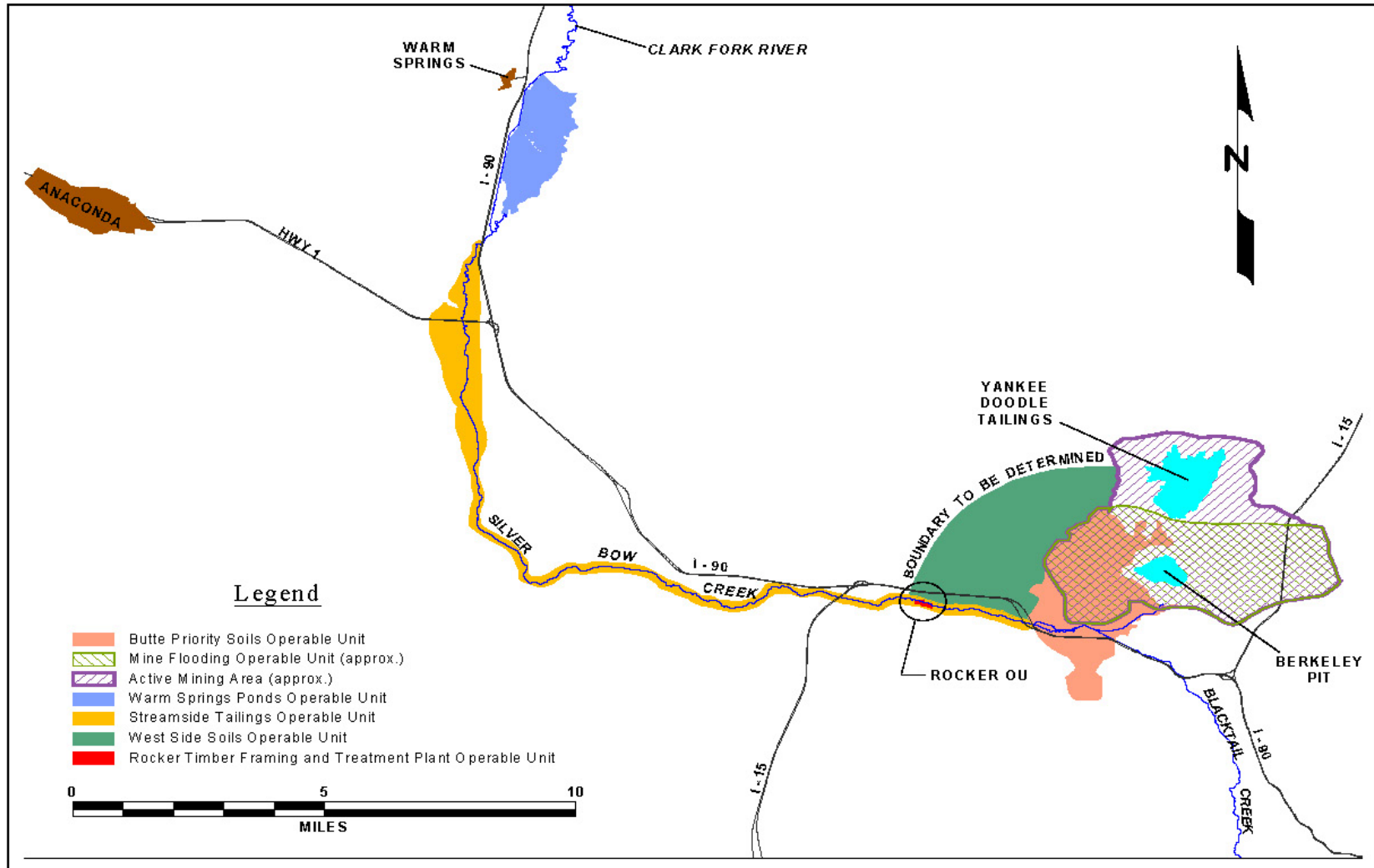
***West Side Soils OU.*** This OU encompasses areas of Silver Bow County that have experienced mining activity but lie outside of other OUs. This is generally north and west of the Butte Hill. EPA has conducted initial scoping activities for this OU.

***Active Mining and Milling OU.*** This area is located east and northeast of the Butte Priority Soils OU and consists of the permitted mine area currently operated by Montana Resources. In 2002, EPA deferred Superfund action at the site to state authority under the operating hard rock mining permit.

The original portion of the Silver Bow Creek/Butte Area NPL site includes four remedial OUs:

***Streamside Tailings OU.*** The Streamside Tailings OU covers an area along Silver Bow Creek and its associated floodplain, and runs from the western end of the Butte Priority Soils OU to the point where Silver Bow Creek enters the Warm Springs Ponds. The OU extends for approximately 25 creek miles between Butte and Warm Springs.

The OU focuses on the fluviually deposited tailings along Silver Bow Creek and the adjacent railroad beds that are contaminated with mine waste. DEQ and EPA completed a ROD for this OU in 1995.



**Figure 4-1**  
**Operable Units within the Silver Bow Creek/**  
**Butte Area NPL Site (approximate boundaries)**  
**Record of Decision**  
**Butte Priority Soils Operable Unit**  
**Silver Bow Creek/Butte Area NPL Site**



The remedial action being implemented at this OU includes the in-situ treatment, excavation, and removal of floodplain materials containing high concentrations of heavy metals and arsenic. The stream channel is being reconstructed and grass, forbs, trees, and shrubs are being planted to reestablish a diverse and permanent vegetative cover along the reconstructed stream and throughout the floodplain. Construction work to implement the remedial plan was initiated in 1999. Restoration activities are being concurrently implemented with remedial activities. An effective and timely remedial action upstream at the Butte Priority Soils OU will help protect and compliment the remedial and restoration accomplishments at the Streamside Tailings OU remedy.

***Warm Springs Ponds Active and Inactive Area OUs.*** The Warm Springs Ponds are located at the western border of the Silver Bow Creek/Butte Area site and consist of three man-made ponds covering 2,400 acres around the confluence of Silver Bow, Mill, Willow, and Warm Springs Creeks. The ponds were constructed by ACMC between 1911 and 1959 to control the amount of mine and mill tailings and contaminated sediment carried into the Clark Fork River from Silver Bow Creek.

All mining-related contamination in these ponds is the result of migration from upstream sources (e.g., from Butte and Streamside Tailings) or from Anaconda site sources. Two RODs for this OU have been signed, one in 1990 and one in 1992. These two RODs are interim RODs and final remedial decisions for the Warm Springs Ponds area will be made at a later date. Remedial action has included removal of tailings, modification of channels to route flood flow, modification of berms, establishment of monitoring systems, upgrading of treatment systems, construction of wet-closure berms, chemical fixation of contaminated tailings and soils, long-term monitoring, and institutional controls. Currently, the active ponds function as settling/retention ponds to remove contaminants carried downstream by Silver Bow Creek to certain permitted levels, prior to discharge to the upper Clark Fork River. To facilitate removal of contaminants, lime is added to the inflow from Silver Bow Creek, which is then routed into the ponds. Construction was completed in 1995, and EPA's latest five-year review of the remedy found that it continues to protect human health and the environment. The long-term need for the Warm Springs Ponds as a treatment facility depends on the effectiveness of upstream cleanup activities.

***Rocker Timber Framing and Treating Plant OU.*** This OU is located about seven miles west of Butte and was the location of a wood treatment plant that operated for 48 years until it closed in 1957. The plant produced treated wood for use in the underground mines in the Butte area. Spilled process materials (arsenic trioxide powder), treated wood chip residues, and dripped or leaked process solutions (creosote and caustic heated arsenic brines) resulted in contamination of soils and groundwater.

In 1989, an initial response action removed approximately 1,000 cubic yards of contaminated material. EPA and DEQ signed a ROD in 1995 to address the remaining contamination in soils and groundwater. The Rocker site remedy involved an

innovative treatment technology to immobilize arsenic in soils and precipitate arsenic from groundwater.

An interim monitoring phase started in 1998. In 2001, a supplemental groundwater treatment action was initiated in support of remedial work being conducted at the adjacent Streamside Tailings OU. To date, EPA has determined that the remedy is protective of human health and the environment, although further actions at the site may be necessary.

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